IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant (s): Balko *et al.*

Serial No.: 10/816,611 Group Art Unit: 1616

Filed: April 2, 2004 Examiner: Qazi, Sabiha Naim

For: 6-ALKYL OR ALKENYL-4-AMINOPICOLINATES AND THEIR USE AS HERBICIDES

I HEREBY CERTIFY THAT THIS CORRESPONDENCE IS BEING DEPOSITED WITH THE UNITED STATES POSTAL SERVICE AS FIRST CLASS MAIL WITH SUFFICIENT POSTAGE IN AN ENVELOPE ADDRESSED TO: COMMISSIONER FOR PATENTS, PO BOX 1450, ALEXANDRIA, VA 22313 ON:

May 3, 2005
DATE OF DEPOSIT

MELANIE S. BRADLEY
PRINT OR TYPE NAME OF PERSON SIGNING CERTIFICATE

Melanie S. Bradley
SIGNATURE OF PERSON SIGNING CERTIFICATE

May 3, 2005
DATE OF SIGNATURE

Commissioner for Patents
PO Box 1450
Alexandria, Virginia 22313

Sir:

AFFIDAVIT UNDER 37 C.F.R. § 1.132

STATE OF INDIANA)
) SS:
COUNTY OF MARION)

I, Paul R. Schmitzer, residing at 7960 North Whittier Place, Indianapolis, County of Marion, State of Indiana, United States of America, being duly sworn, depose and say,

THAT I received the degree of Bachelors of Science in Biochemistry from Northern Michigan University in 1989;

THAT I am the author or co-author of 6 publications in referred journals;

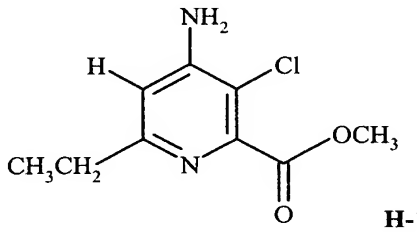
THAT I have been employed by Dow AgroSciences LLC or its predecessor companies since 1991;

THAT my present position is that of Senior Research Biologist in Weed Management for Discovery Research;

THAT in my current position I am involved in evaluating synthetic materials and compositions for herbicidal activity;

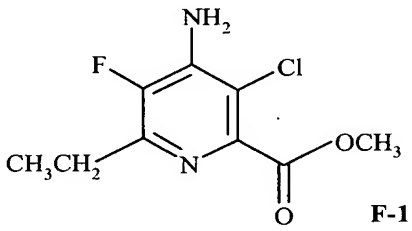
THAT I carried out, or had carried out under my direction, under carefully controlled conditions, a series of pre-emergent and post-emergent herbicidal evaluations of:

Methyl 4-amino-3-chloro-6-ethylpyridine-2-carboxylate



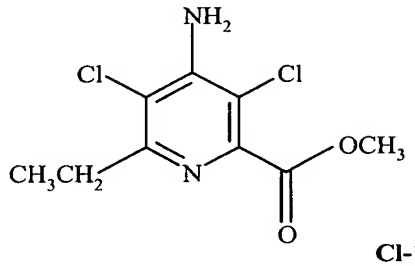
H-1

Methyl 4-amino-3-chloro-5-fluoro-6-ethylpyridine-2-carboxylate



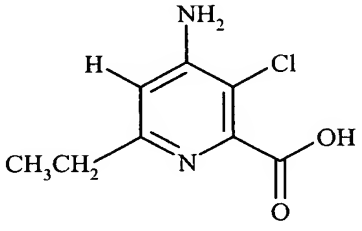
F-1

Methyl 4-amino-3,5-dichloro-6-ethylpyridine-2-carboxylate



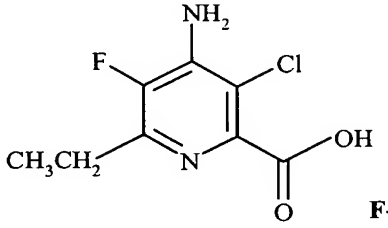
Cl-1

4-Amino-3-chloro-6-ethylpyridine-2-carboxylic acid



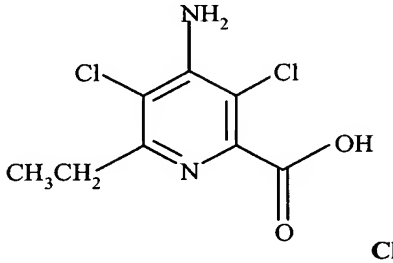
H-2

4-Amino-3-chloro-5-fluoro-6-ethylpyridine-2-carboxylic acid



F-2

4-Amino-3,5-dichloro-6-ethylpyridine-2-carboxylic acid



Cl-2

THAT the procedure and the results obtained were as follows:

For general pre-emergent comparisons, representative compositions of Compounds H-1, F-1, Cl-1, H-2, F-2 and Cl-2 were evaluated for pre-emergence control of 19 species of plants. In these evaluations, seeds of plant species were planted in soil medium consisting of 80% mineral and 20% crushed, washed stone in pots with a surface area of 530 cm^2.

Technical material (~4.3 mg for the 280 g ai/ha rate) was dissolved in 8 ml of solvent (acetone/DMSO; 97:3 v/v) to prepare a stock solution. The spray solutions were made by

injecting 4 ml aliquots of the stock solution into 11 ml of spray solution comprised of water and TWEEN 20 (99.9:0.1 v/v).

Solutions (approximately 2.5 ml of spray volume) were sprayed onto the soil of the pots seeded with the test species using a Cornwall 5.0 ml glass syringe fitted with a TeeJet TN-3 hollow cone nozzle. Other pots were sprayed with similar compositions containing no active ingredient to serve as controls.

Thereafter, the pots were maintained under conditions conducive to plant growth. Three weeks after treatment, the pots were examined for plant growth and evaluated on a scale of 0 to 100 where 0 represents no effect and 100 represents complete kill. The controls had 0 ratings for all species.

By applying the well-accepted probit analysis as described by J. Berkson in *Journal of the American Statistical Association*, 48, 565 (1953) and by D. Finney in *"Probit Analysis"*, Camridge University Press (1952), percent control data from the test methods described can be used to calculate GR_{20}, GR_{50} and GR_{80} values, which are defined as growth reduction factors that correspond to the effective dose of herbicide required to kill or control 20 percent, 50 percent or 80 percent, respectively, of a target plant.

The results are set forth below in Table 1.

Table 1

Comparison of Pre-Emergent Data for 6-alkyl picolinates:

Compound	BWave GR_{80}	GWave GR_{50}	ZEAMX GR_{20}	ORYSA GR_{20}	TRZAS GR_{20}
	------- g ai/ha -------				
H-1	548	>500	>500	>500	>500
F-1	<17.5	34	56	10	42
Cl-1	43	108	157	24	84
H-2	222	>500	>500	>500	500
F-2	21	74	88	37	73
Cl-2	42	95	195	70	78

BW broadleaf weeds
GW grass weeds
GR growth reduction
ZEAMX *Zea mays* Maize
ORYSA *Oryza sativa* Rice, common
TRZAS *Triticum aestivum* Spring wheat

For general post-emergent comparisons, representative compositions of Compounds H-1, F-1, Cl-1, H-2, F-2 and Cl-2 were evaluated for post-emergence control of 23 species of plants. Test species were grown from seed in SunGro Metro-mix 360 (Vermiculite, sphagnum, peatbark, ash: 37-47%, 31-45%, 12-25%, pH 6.0 - 6.8) in square plastic pots with a surface area of 91 cm^2. All species were reared under conditions conducive for plant growth until the desired stage of growth was reached.

Technical material (~ 15 mg for the 500 ppm rate) was dissolved in 4 ml of solvent (acetone/DMSO; 97:3 v/v). If the material was not readily dissolved sonication or gentle warming was used until solubilized. Once dissolved, the solution was serial diluted to achieve desired dose response. Thirteen ml of solvent (water/acetone/isopropyl alcohol/DMSO/Agri-ex/Triton X-155; 46:40:12:1:1:0.02 v/v) were added to each of the bottles containing the 2 ml aliquots.

Thereafter, the plants were maintained under conditions conducive to plant growth. Two weeks after treatment, the treated plants were examined for plant growth and evaluated on a scale of 0 to 100 where 0 represents no effect and 100 represents complete kill. The controls had 0 ratings for all species.

By applying the well-accepted probit analysis as described by J. Berkson in *Journal of the American Statistical Association*, 48, 565 (1953) and by D. Finney in *"Probit Analysis"*, Camridge University Press (1952), percent control data from the test methods described can be used to calculate GR_{20}, GR_{50} and GR_{80} values, which are defined as growth reduction factors that correspond to the effective dose of herbicide required to kill or control 20 percent, 50 percent or 80 percent, respectively, of a target plant.

The results are set forth below in Table 2.

Table 2

Comparison of Post-Emergent Data for 6-alkyl picolinates:

Compound	**BWave GR_{80}**	**GWave GR_{50}**	**ZEAMX GR_{20}**	**ORYSA GR_{20}**	**TRZAS GR_{20}**
	------- ppm -------				
H-1	35	>500	>500	>500	>500
F-1	<31	119	192	297	16
Cl-1	61	420	245	180	45
H-2	65	>500	>500	>500	500
F-2	<31	122	85	41	106
Cl-2	70	358	242	186	167

BW broadleaf weeds

GW grass weeds

GR growth reduction

ZEAMX *Zea mays* Maize

ORYSA *Oryza sativa* Rice, common

TRZAS *Triticum aestivum* Spring wheat

Further deponent sayeth not.

Paul R. Schmitzer

3 May 2005
Date

Sworn to and subscribed to me this 3rd day of May, 2005.

Melanie S. Bradley
Notary Public State of Indiana
Melanie S. Bradley
Marion County
My Commission Expires November 2, 2012